AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. Contract ID Code	Page	Of
Cost-Plus-Fixed-Fee	1	10

2. Amendment/Modification No.	3. Effective Date	4. Requisition/Purchase Req No.	5. Project No. (If applicable)
P00002	2004JUN04	SEE SCHEDULE	

6. Issued By Code W56HZV

TACOM WARREN BLDG 231
AMSTA-AQ-ABGB
VALERIE PETTYGRUE (586)574-7239
WARREN, MICHIGAN 48397-5000
HTTP://CONTRACTING.TACOM.ARMY.MIL
EMAIL: PETTYGRV@TACOM.ARMY.MIL

7. Administered By (If other than Item 6) Code S2305A

DCMA DETROIT
U.S. ARMY TANK & AUTOMOTIVE COMMAND
(TACOM)
ATTN: DCMAE-GJD
WARREN, MI 48397-5000

SCD C **PAS** NONE **ADP PT** HQ0337

8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)

STEWART & STEVENSON VEHICLE SERVICES, INC.
100 W BIG BEAVER RD., SUITE 560
TROY, MI. 48084-5208

TYPE BUSINESS: Large Business Performing in U.S.

Code 3GE00 **Facility Code**

☐ **9A. Amendment Of Solicitation No.**

9B. Dated (See Item 11)

☒ **10A. Modification Of Contract/Order No.**
DAAE07-03-C-L120

10B. Dated (See Item 13)
2003SEP25

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ **The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers**
☐ **is extended,** ☐ **is not extended.**

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting And Appropriation Data (If required)
ACRN: AA NET INCREASE: $55,449.01

13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS
It Modifies The Contract/Order No. As Described In Item 14.

KIND MOD CODE: G

☐	**A. This Change Order is Issued Pursuant To: The Changes Set Forth In Item 14 Are Made In The Contract/Order No. In Item 10A.**
☐	**B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).**
☒	**C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:** MUTUAL AGREEMENT OF THE PARTIES
☐	**D. Other (Specify type of modification and authority)**

E. IMPORTANT: Contractor ☐ **is not,** ☒ **is required to sign this document and return _____ copies to the Issuing Office.**

14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE SECOND PAGE FOR DESCRIPTION

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. Name And Title Of Signer (Type or print)		16A. Name And Title Of Contracting Officer (Type or print)	
		WYMAN E. YOUNG II YOUNGE@TACOM.ARMY.MIL (586)574-8093	
15B. Contractor/Offeror	**15C. Date Signed**	**16B. United States Of America**	**16C. Date Signed**
_____ **(Signature of person authorized to sign)**		**By** /SIGNED/ **(Signature of Contracting Officer)**	2004JUN04

SECTION A - SUPPLEMENTAL INFORMATION

PROGRAM: Next Generation Tactical Wheeled Vehicles

PURPOSE OF MODIFICATION: Fund Cost Growth, Make Changes to the Scope under the Changes Clause and Extend the Period of Performance

PRIOR CONTRACT AMOUNT: $ 784,532.50
AMOUNT OF THIS ACTION: $ 55,449.01
TOTAL CONTRACT AMOUNT: $ 839,981.51

1. This bilateral modification accomplishes three things:

a. Funds the cost growth for the basic effort in the amount of $47,372.00

b. Incorporates training into the scope of work in the amount of $8,077.01

c. Extends the period of performance by one (1) month.

2. As a result of this modification the following changes are incorporated into the contract:

a. Section B is updated to fund the cost growth and the training:

The total estimated cost for CLIN 0001 is increased by $55,449.01 from $784,532.50 to $839,981.51. As a result,CLIN 0001AB is established to fund the cost growth in the amount of $47,372 and CLIN 0001AC is established to fund the training in the amount of $8,077.01.

b. Section C is updated to incorporate the training into the scope of work.

c. Section F is updated to reflect the revised period of performance from eight (8) months to nine (9) months.

d. Section G is updated to incorporate the applicable accounting data.

3. As a result of this modification, the total amount of the contract is increased by $55,449.01, from $784,532.50 to $839,981.51.

4. Except as specifically provided for in this Modification P00002, all other terms and conditions of the contract remain unchanged and in full force and effect.

*** END OF NARRATIVE A 002 ***

Name of Offeror or Contractor: STEWART & STEVENSON VEHICLE SERVICES, INC.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS				
0001	SERVICES LINE ITEM NOUN: MODELING AND SIMULATION SECURITY CLASS: Unclassified Contractor shall furnish all the supplies and services to accomplish the tasks specified in Section C, Scope of Work. Estimated Cost: $770,435.27 Fixed Fee: $ 69,546.24 Total Cost: $839,981.51 (End of narrative B001)				
0001AA	SERVICES LINE ITEM NOUN: MODELING AND SIMILUATION PRON: E132C470EH PRON AMD: 01 ACRN: AA AMS CD: 63300544111 Inspection and Acceptance INSPECTION: Destination ACCEPTANCE: Destination				$ 784,532.50
0001AB	SERVICES LINE ITEM NOUN: MODELING AND SIMLUATION PRON: E132C541EH PRON AMD: 02 ACRN: AA AMS CD: 63300544111 Inspection and Acceptance INSPECTION: Destination ACCEPTANCE: Destination Deliveries or Performance DLVR SCH REL CD: 001 — QUANTITY: 0 — PERF COMPL DATE: SEE SECTION F $ 47,372.00				$ 47,372.00
0001AC	SERVICES LINE ITEM NOUN: TRAINING FOR MODELS PRON: E132C541EH PRON AMD: 02 ACRN: AA				$ 8,077.01

Name of Offeror or Contractor: STEWART & STEVENSON VEHICLE SERVICES, INC.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	AMS CD: 63300544111 Inspection and Acceptance INSPECTION: Destination ACCEPTANCE: Destination Deliveries or Performance DLVR SCH REL CD: 001 — QUANTITY: 0 — PERF COMPL DATE: SEE SECTION F $ 8,077.01				
0002	DATA ITEM SECURITY CLASS: Unclassified Technical Data as set forth in Contract Data Requirements List (DD Form 1423) hereinafter referred to as Exhibit A. See Section J for delivery requirements. (End of narrative B001)			Not Separately Priced	

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

Statement of Work for

Next Generation Tactical Wheeled Vehicles

C.1 Introduction

C.1.1 DEFINITIONS:

Model and Simulation: The use of models and simulations, either statically or over time, to develop data as a basis for making managerial or technical decisions. This includes, but is not limited to, emulators, prototypes, simulators, and stimulators.

Data Verification and Validation (V&V): The process of verifying the internal consistency and correctness of data and validating that it represents real-world entities appropriate for its intended purpose or an expected range of purposes. The process has two perspectives: the producer and the user process.

C.1.2 The contractor, as an independent contractor and not as an agent of the Government, and within the schedules and constraints as set forth below, shall provide the supplies, services, support and facilities required for design, integration, fabrication of a hybrid advanced technology tactical wheeled vehicle demonstration, to include technologies that will enable the Army to meet the deployment and sustainment goals of the Future Combat System (FCS) and Future Tactical Truck System (FTTS) programs. This is a Concept Exploration (CE) effort, to include an option for a demonstration for a military utility assessment of the various system technologies. The demonstration and the Modeling and Simulation outputs of this program will be utilized by the Army to determine their impact on the Armys transformation goals.

C.2. PROGRAM OVERVIEW:

C.2.1 The Army is interested in joint development of hybrid advanced technology tactical wheeled vehicles. The vehicle demonstration shall include technologies that will enable the Army to meet the deployment and sustainment goals of the FCS and FTTS programs. Core objectives will be a 30% reduction in fuel consumption, combat vehicle mobility, internal C130 & external CH-47 air transportation without preparation, intelligent load handling system (load and unload cargo directly onto C-130 off load partial loads from flat racks), reduced logistics footprint, pit stop maintenance concept, improved vehicle capability, crew ballistic and mine protection capability, a 1 to 1 ratio of vehicle weight to cargo capacity. The sharing of Contractor data and current Models will be required for the Modeling and Simulation effort that will be utilized throughout the execution of this project.

C.2.2 This project will result in the design and integration of key technologies and a demonstration of these key technologies on a tactical wheeled vehicle. In addition, models will be developed that can be used by the Army to evaluate how new key technologies will reduce the overall logistics footprint. The demonstration and the Modeling and Simulation outputs of this program will be utilized by the Army to determine their impact on the Armys transformation goals.

C.2.3 Technical Overview:

Hybrid Advanced Technology Tactical Wheeled Vehicle Objectives: The technical objectives for the UV and MSV are listed below and a detailed explanation of FTTS desired capabilities can be found in the FTTS MSV and UV Draft Performance Specification documents.

Primary Vehicle Power: The vehicle platform(s) shall be modeled (UV and MSV) and demonstrated (UV and/or MSV) with power by a hybrid solution with the core objective of 30% reduction in fuel consumption when compared to current military vehicles of the same class.

Reliability, Availability, and Maintainability (RAM): Through simultaneous and/or concurrent engineering the contractor shall address Reliability, Availability, and Maintainability throughout the concept design process. Specific RAM system requirements are listed in the Performance Specification documents. The contractor shall demonstrate through modeling and simulation the RAM concepts that show how a combination of easy maintenance (operator level) coupled with ultra reliable components will meet FTTS RAM requirements. This includes documentation and identification of modeling techniques.

Payload: The MSV shall be cable of transporting a payload of 13 ST including flat rack. The UV shall have a payload of at least 2 to 2 1/2 ST excluding full internal fuel, lubricants, coolants, 2 soldiers and their individual equipment and weapons, and Basic Issue Items (BII).

Cargo Capacity: The MSV platform shall be designed to achieve a 1 to 1 ratio of vehicle weight to cargo capacity.

Mobility: The vehicles shall have mobility IAW Section 3 of the Performance Specification.

Deployability: The MSV platform shall be designed and demonstrated to roll on-roll off an armored C-130 without preparation. It is desired to transport the MSV aboard a C-130 with up to a 6-ST payload. The vehicles (UV and MSV) must meet highway and rail tunnel specification envelopes.

Versatility: The MSV shall have an intelligent load handling system (load cargo directly onto C-130, off load partial loads from flat racks).

Logistics Footprint Reduction: The MSV and UV shall be designed to achieve maximum logistics footprint reduction between both platforms and all variants.

Maintenance: The UV and MSV platforms shall be designed and demonstrated to have two-level maintenance, and pit-stop maintenance. All services and maintenance tasks shall minimize the use of tools and allow the operator to complete the task with minimal effort.

Survivability: The vehicles shall have crew ballistic and mine protection capability. The contractor shall document, maintain, and make available to the Government, upon request, all survivability design methods (including armor, signature suppression, vulnerability reduction, battlefield repair ability and nuclear, biological and chemical (NBCCS) protection designs.

C.3 SCOPE

C.3.1 Modeling and Simulation (M&S):

C.3.1.1 The contractor shall provide Modeling and Simulation of the vehicle platforms for the hybrid tactical wheeled vehicle(s). The M&S data will include a concept analysis with technology integration that reasonably projects a technical readiness for FTTS ACTD and SDD. The data provided for long-term Government analysis shall include a weight analysis (curb weight, GVW, and GCVW) and solid model concepts for both the Utility Vehicle (UV) and Maneuver Sustainment Vehicle (MSV). In addition, the contractor shall utilize the NATO Reference Mobility Model (NRMM) to analyze cross country and on-road mobility for both the UV and MSV. The contractor shall provide a powertrain model for both the UV and MSV to analyze hybrid system performance as well as power management and fuel economy. Moreover, the contractor shall perform and provide dynamic model analyses of the UV and MSV and provide sufficient detail to allow for dynamic model development with the Dynamic Analysis and Design Systems (DADS) tool. The contractor shall also model the advanced load handling system in order to achieve a seamless distribution of equipment for loading/unloading C-130s as well as providing structural analyses and simulations where applicable to ensure structural rigidity with the goal of reducing weight. The Government will work with the contractor to analyze and validate the models through the use of TARDECs High Performance Computing (HPC) and Advanced Collaborative Environment (ACE) capabilities, along with the respective modeling and simulation teams.

C.3.1.2 The contractor shall use Verification and Validation procedures during M&S performance to substantiate the consistency and correctness of generated data, and validating it represents real-world entities appropriate for its intended purpose or expected range of purposes.

C.3.1.3 The sharing of data or current Models will be required for the Modeling and Simulation effort that will be utilized throughout the execution of this project. The shared data and models include a weight analysis, solid, mobility, powertrain, dynamic, and structural models for the UV and MSV, as well as a load handling model and analysis for the MSV. Where practicable, the contractor shall use existing M&S standards. Such standards include, but are not limited to, authoritative algorithms and models, interoperability standards for simulations and command and control systems, and data interchange standards. The contractor shall use these standards to reduce costs by providing approved solutions to common problems.

C.3.1.4 Integrated Product Teams (IPTs) / Integrated Product and Process Development (IPPD):

The contractor shall use Integrated Product Teams (IPTs) in the design and integration phases of this program. These IPTs shall include Government and subcontractor participation. The Government will be an active participant during the IPTs. The contractor shall be ultimately responsible for all decisions during performance. The Government shall not be liable for suggested solutions. The contractor shall also use Integrated Product and Process Development (IPPD) to insure the full integration of all functional areas in the overall program effort. The Government and contractor shall periodically meet to address progress and program issues.

C.4 MEETINGS:

C.4.1 Start of Work Meeting:

The Government and contractor shall attend a start-of-work meeting at TACOM to be convened within twenty days after the date of contract award. The meeting shall include a discussion of the Statement of Work pertaining to all functional areas. The meeting shall also serve as a forum to finalize IPT assignments and membership for subsequent performance of the contract effort.

C.4.2. In Process Reviews (IPR)

The contractor shall host two In Process Reviews (IPR) at its facility, with the first IPR due the week of 8 Dec 03 and the final IPR due the week of 8 Feb 04. The contractor shall coordinate specific meeting dates for each of the IPRs with the IPT. The focus of these reviews, as a minimum, will be on the efforts of the assigned IPTs in the areas of modeling and simulation, systems engineering, logistics footprint, sustainability, safety, test planning, and human factors engineering/MANPRINT. The IPT reviews will also focus on the contractors use of IPPD to integrate the overall effort against the contract schedule.

C.4.3. Training

The Contractor shall provide ninety hours of training on the models developed under this contract, no later than 30 days after delivery of the final report. At a minimum, the Contractor shall provide training on the Pro-E solid models and the vehicle dynamics performance model. There will be a maximum of twelve TARDEC associates being trained. The contractor shall contact the COR to setup the location of the training.

C.5 DELIVERABLES

C.5.1 Technical Report:

The contractor shall prepare a final technical report in the format and scope specified in the applicable Data Item Description (DID) (DD Form 1664) DI-MISC-80711A. This information shall be furnished to the Government, in accordance with the requirements, quantities and schedules set forth in the Contract Data Requirements List (CDRL) (DD Form 1423), data item A003.

C.5.2 Modeling and Simulation Data

The Contractor shall provide to the government models developed under this contract, in Contractor format and in accordance with the CDRL (DD Form 1423), data item A002. At a minimum, the Contractor shall provide the models developed to address the required weight analysis, solid model concepts, powertrain configuration and performance, vehicle dynamics performance analysis, vehicle mobility analysis and any structural analysis performed to demonstrate the structural integrity of the major vehicle components or vehicle subsystems.

The Contractor shall provide the model data used for the M&S by completing the M&S data sheets provided by the Government as the data becomes available in accordance with the CDRL (DD Form 1423), data item A001.

C.6 DEMONSTRATION OPTION:

C.6.1 This is applicable if the option is exercised in H.1.

C.6.2 SCOPE

C.6.2.1 The contractor shall provide a demonstration for a military utility assessment of the various system technologies including a hybrid solution demonstrating efforts to reduce fuel consumption, on-board power generation, C-130 deployability including weight analysis and payload to weight ratio, along with demonstrating two level maintenance and pit stop maintenance.

C.6.3 The contractor shall provide a demonstration to US Army TACOM in Jul 04.

C.6.4 DELIVERABLE

C.6.4.1 The contractor shall prepare a final technical report in the format and scope specified in the applicable Data Item Description (DID) (DD Form 1664) DI-MISC-80711A. This information shall be furnished to the Government, in accordance with the requirements, quantities and schedules set forth in the Contract Data Requirements List (CDRL) (DD Form 1423), data item A003.

*** END OF NARRATIVE C 001 ***

SECTION F - DELIVERIES OR PERFORMANCE

DELIVERIES OR PERFORMANCE

F.1 Delivery of Data

F.1.1 The contractor is encouraged to submit all reports electronically to the extent practicable in accordance with the Contract Data Requirements List (CDRL) (DD Form 1423), to the following e-mail addresses:

Szkubied@tacom.army.mil
pettygrv@tacom.army.mil

F.1.2 All data deliverable under this contract that cannot be submitted electronically shall be delivered FOB Destination to the following address and in accordance with the Contract Data Requirements List (CDRL) DD Form 1423:

U.S. Tank-automotive and Armaments Command
ATTN: AMSTA-TR-D/MS 289, Mr. Don Szkubiel
6501 E. 11 Mile Road
Warren, Michigan 48397-5000

F.2 Performance -- Basic Contract

F.2.1 The period of performance of the Contract shall be nine (9) months from date of award, including submission of Final Scientific and Technical Report.

F.2.2 The Contractor shall submit the Final Scientific and Technical Report eight (8) months after contract award. Government acceptance of final report will constitute completion.

F.2.3 The Contractor shall complete training for models nine (9) months after contract award.

F.3 Performance -- Option

F.3.1 If the option is exercised by modification to this contract, the period of performance for the option shall be six (6) months after contract award of option. Please see Section H.1 for the option exercise period.

F.3.2 The Contractor shall submit the Final Scientific and Technical Report six (6) months after the option is exercised. Government acceptance of final report will constitute completion of the option effort.

*** END OF NARRATIVE F 001 ***

Name of Offeror or Contractor: STEWART & STEVENSON VEHICLE SERVICES, INC.

SECTION G - CONTRACT ADMINISTRATION DATA

LINE ITEM	PRON/ AMS CD/ MIPR	ACRN	OBLG STAT/ JOB ORD NO	PRIOR AMOUNT	INCREASE/DECREASE AMOUNT	CUMULATIVE AMOUNT
0001AB	E132C541EH	AA	2	$ 0.00	$ 47,372.00	$ 47,372.00
	63300544111		32C541			
0001AC	E132C541EH	AA	2	$ 0.00	$ 8,077.01	$ 8,077.01
	63300544111		32C541			
				NET CHANGE	$ 55,449.01	

SERVICE NAME	NET CHANGE BY ACRN	ACCOUNTING CLASSIFICATION		ACCOUNTING STATION	INCREASE/DECREASE AMOUNT
Army	AA	21	32040000036D7675P633005255Y S20113	W56HZV	$ 55,449.01
				NET CHANGE	$ 55,449.01

	PRIOR AMOUNT OF AWARD	INCREASE/DECREASE AMOUNT	CUMULATIVE OBLIG AMT
NET CHANGE FOR AWARD:	$ 784,532.50	$ 55,449.01	$ 839,981.51